Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.64

Product:	3003846 - PE Eccentric Reducer Long 200x110
Unit:	1 piece
Manufacturer:	Wavin - IT - SM Maddalena

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - IT - SM Maddalena (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.77E+0	2.30E-1	1.36E-1	2.13E+0	2.38E-2	1.02E+0	1.32E-2	-1.17E+0	2.03E+0
GWP-f	kg CO2 eq	1.95E+0	2.30E-1	1.16E-1	2.29E+0	2.38E-2	7.83E-1	1.32E-2	-1.27E+0	1.84E+0
GWP-b	kg CO2 eq	-1.81E-1	1.30E-4	9.79E-3	-1.71E-1	1.44E-5	2.40E-1	9.89E-6	1.08E-1	1.77E-1
GWP-luluc	kg CO2 eq	1.28E-3	8.43E-5	9.79E-3	1.12E-2	8.41E-6	1.37E-4	1.89E-7	-1.15E-3	1.02E-2
ODP	kg CFC11 eq	1.17E-7	5.26E-8	1.16E-8	1.81E-7	5.48E-9	1.91E-8	2.81E-10	-6.81E-8	1.38E-7
AP	mol H+ eq	7.60E-3	1.61E-3	4.68E-4	9.68E-3	1.35E-4	7.92E-4	6.70E-6	-3.99E-3	6.63E-3
EP-fw	kg P eq	3.87E-5	1.84E-6	1.80E-6	4.23E-5	1.96E-7	3.99E-6	8.70E-9	-2.57E-5	2.08E-5
EP-m	kg N eq	1.39E-3	5.37E-4	7.90E-5	2.00E-3	4.84E-5	2.36E-4	4.74E-6	-7.69E-4	1.52E-3
EP-T	mol N eq	1.53E-2	5.93E-3	8.88E-4	2.21E-2	5.34E-4	2.59E-3	2.72E-5	-8.64E-3	1.67E-2
POCP	kg NMVOC eq	6.69E-3	1.67E-3	2.76E-4	8.63E-3	1.53E-4	8.15E-4	1.07E-5	-3.66E-3	5.95E-3
ADP-mm	kg Sb eq	2.65E-5	5.73E-6	2.82E-6	3.50E-5	6.15E-7	3.15E-6	6.73E-9	-8.86E-6	3.00E-5
ADP-f	MJ	6.63E+1	3.50E+0	1.53E+0	7.13E+1	3.65E-1	2.43E+0	2.05E-2	-3.71E+1	3.71E+1
WDP	m3 depriv.	1.43E+0	1.05E-2	5.40E-1	1.98E+0	1.12E-3	4.64E-2	9.40E-5	-8.61E-1	1.17E+0
PM	disease inc.	7.81E-8	2.01E-8	4.68E-9	1.03E-7	2.15E-9	1.29E-8	1.41E-10	-4.00E-8	7.80E-8
IR	kBq U-235 eq	6.21E-2	1.53E-2	1.42E-3	7.88E-2	1.59E-3	7.50E-3	9.56E-5	-2.97E-2	5.83E-2
ETP-fw	CTUe	2.67E+1	2.81E+0	2.41E+0	3.19E+1	2.96E-1	2.84E+0	1.81E-2	-1.44E+1	2.07E+1
HTP-c	CTUh	6.58E-10	1.03E-10	1.28E-10	8.89E-10	1.05E-11	3.30E-10	4.98E-13	-3.80E-10	8.50E-10
HTP-nc	CTUh	1.40E-8	3.32E-9	2.66E-9	2.00E-8	3.53E-10	4.14E-9	1.15E-11	-8.31E-9	1.62E-8
SQP	Pt	2.34E+1	2.89E+0	2.78E-1	2.66E+1	3.12E-1	1.92E+0	5.26E-2	-3.48E+1	-5.92E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.30E+0	4.90E-2	5.28E+0	9.63E+0	5.23E-3	1.18E-1	8.12E-4	-6.19E+0	3.56E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.30E+0	4.90E-2	5.28E+0	9.63E+0	5.23E-3	1.18E-1	8.12E-4	-6.19E+0	3.56E+0
PENRE	MJ	7.11E+1	3.71E+0	1.66E+0	7.65E+1	3.87E-1	2.59E+0	2.18E-2	-4.00E+1	3.95E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.11E+1	3.71E+0	1.66E+0	7.65E+1	3.87E-1	2.59E+0	2.18E-2	-4.00E+1	3.95E+1
PET	MJ	7.54E+1	3.76E+0	6.94E+0	8.61E+1	3.93E-1	2.71E+0	2.26E-2	-4.62E+1	4.31E+1
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	2.27E-2	3.87E-4	1.28E-2	3.59E-2	4.13E-5	1.39E-3	2.54E-5	-1.50E-2	2.23E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.34E-5	8.71E-6	1.48E-6	2.36E-5	9.33E-7	4.08E-6	2.46E-8	-1.29E-5	1.58E-5
NHWD	kg	1.00E-1	2.08E-1	1.45E-2	3.23E-1	2.26E-2	1.19E-1	9.04E-2	-4.53E-2	5.10E-1
RWD	kg	6.77E-5	2.38E-5	1.58E-6	9.31E-5	2.48E-6	9.59E-6	1.34E-7	-2.80E-5	7.72E-5
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

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